Program and Abstracts

ASV11

The 11th Asian Symposium on Visualization

June 5–9, 2011

Toki Messe (Niigata Convention Center), Niigata, Japan

Organized by
The Visualization Society of Japan
The Visualization Research Center, Niigata University

Co-organized by
Architectural Institute of Japan
Combustion Society of Japan
Japan Society of Civil Engineers
Japan Society of Maintenology
Society of Automotive Engineers of Japan
The Japan Society for Aeronautical and Space Sciences
The Japan Society of Fluid Mechanics
The Japan Society of Mechanical Engineers
The Japanese Society for Multiphase Flow
The Society of Instrument and Control Engineers
Turbomachinery Society of Japan
The 11th Asian Symposium on Visualization

Venue

Toki Messe (Niigata Convention Center)
http://www.tokimesse.com/english/
Bandaijima 6-1, Chuo-ku, Niigata, Niigata, 950-0078, Japan

From Niigata Airport
- By taxi
- Approx. 20 min.

From Niigata Station
- By bus
- Approx. 10 min.
- By taxi
- Approx. 5 min.
- On foot
- Approx. 20 min.
Layout of Rooms (Toki Messe)

3F
- Room C (302A)
- Room B (302B)
- Exhibits, Posters (301A)
- Room A (301B)
- Registration (June 6 noon, 7, 8)
- Escalator

2F
- Welcome reception
- Registration (June 5, 6 morning)
- Ceremony Room (201)
- Atrium
- Escalator

Meeting room
Common room, Presentation test room
Staff room
## The 11th Asian Symposium on Visualization

### Schedule

#### Sunday (June 5)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>16:00 PM - 18:00 PM</td>
<td>Registration &amp; Welcome Reception (snacks and drinks)</td>
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</tbody>
</table>

#### Monday (June 6)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:30 AM - 9:00 AM</td>
<td>Registration</td>
</tr>
<tr>
<td>9:00 AM - 9:30 AM</td>
<td>Ceremony Room</td>
</tr>
<tr>
<td>9:30 AM - 10:20 AM</td>
<td>Plenary Lecture, Jurgen Kompenhans</td>
</tr>
<tr>
<td>10:20 AM - 11:30 AM</td>
<td>Plenary Lecture, Toashio Kobayashi</td>
</tr>
<tr>
<td>11:00 AM - 12:00 PM</td>
<td>Lunch</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>12:05 PM - 12:55 PM</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>13:00 PM - 14:30 PM</td>
<td>OS8, OS9, OS15, OS4</td>
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</tbody>
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#### Tuesday (June 7)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9:00 AM - 10:00 AM</td>
<td>Keynote Lecture, S.J. Lee</td>
</tr>
<tr>
<td>10:00 AM - 10:20 AM</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>10:20 AM - 12:05 PM</td>
<td>OS2, OS3, OS99, OS16</td>
</tr>
<tr>
<td>12:05 PM - 13:25 PM</td>
<td>Lunch</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>13:25 PM - 14:25 PM</td>
<td>Short Presentation</td>
</tr>
<tr>
<td>14:25 PM - 15:20 PM</td>
<td>Poster Session &amp; Coffee Break, the &quot;Exhibits, Posters&quot; room</td>
</tr>
<tr>
<td>15:20 PM - 16:25 PM</td>
<td>OS10, OS99, OS16</td>
</tr>
<tr>
<td>16:25 PM - 17:25 PM</td>
<td>Meeting Room</td>
</tr>
<tr>
<td>17:25 PM - 18:30 PM</td>
<td>ISCV Meeting</td>
</tr>
<tr>
<td>18:30 PM - 20:30 PM</td>
<td>ASV11 Committee and Organizers Meeting, Hotel Okura</td>
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#### Wednesday (June 8)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9:00 AM - 10:00 AM</td>
<td>Keynote Lecture, S. Leonov</td>
</tr>
<tr>
<td>10:00 AM - 11:00 AM</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>10:00 AM - 12:05 PM</td>
<td>OS11, OS99, OS12, OS99</td>
</tr>
<tr>
<td>12:05 PM - 13:25 PM</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:25 PM - 14:25 PM</td>
<td>OS11, OS1, OS7, OS5</td>
</tr>
<tr>
<td>14:25 PM - 15:15 PM</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>15:15 PM - 16:15 PM</td>
<td>OS11, OS1, OS7, OS5</td>
</tr>
<tr>
<td>16:15 PM - 17:25 PM</td>
<td>OS13, OS99, OS7, OS5</td>
</tr>
<tr>
<td>17:25 PM - 18:30 PM</td>
<td>Award Ceremony and Banquet, Hotel Nikko</td>
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#### Thursday (June 9)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:30 AM - 13:00 PM</td>
<td>Technical Bus Tour, Niigata Prefectural Museum of History</td>
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The 11th Asian Symposium on Visualization

Technical Program

June 6

Ceremony Room

Opening Ceremony
9:20am-9:50am
Chairperson: Y. Nakayama, Tokai University

Plenary Lecture
9:50am-11:40am
Chairperson: Q.D. Wei, Peking University

Quantitative Visualization Techniques for Aerodynamics
J. Kompenhans, DLR's Institute of Aerodynamics and FLow Technology

Visualization in Automobile Engineering
T. Kobayashi, Japan Automobile Research Institute

Room A

OS8 Visual Information and Analysis
13:00pm-14:30pm
Chairperson: K. Arai, Saga University

3D Bone Axis Analysis Method Using CT Images of the Lower Limbs and Its Evaluation
ASV11-08-02
A. Doi, T. Takahashi, T. Furukawa

Two-Dimensional Orthogonal Wavelet Analysis of Turbulent Structures in Various Near-wakes
ASV11-08-03
A. Rinoshika, H. Omori

High-Speed PIV Measurement of Particle Velocity and Concentration in a Horizontal Pneumatic Conveying
ASV11-08-04
F. Yan, A. Rinoshika

Parallel Volume Rendering over Network for Tiled Display Wall
ASV11-08-05
H. Miyachi, N. Sakamoto, K. Koyamada, K. Kiyokawa

Visualization of Blurred Images of Liquid by Multi-scale Analysis
ASV11-08-06

Three-Dimensional Flow Visualization and Segmentation of Characteristics of Turbulence Structure in Sibilant /s/
ASV11-08-08
K. Oita, H. Shigeta, K. Kiyokawa, K. Nozaki, H. Takemura

OS8 Visual Information and Analysis
14:50pm-16:20pm
Chairperson: A. Rinoshika, Yamagata University
Co-Chairperson: H. Miyachi, Cybernet System Co. Ltd.

Examination of a Pressure Estimation Method using PIV Measurement Data for Automobile Development
ASV11-08-09
K. Matsushima, M. Yonezawa, A. Ogawa, H. Motohara
Image Retrieval Method Based on Hue Information and Wavelet Description Based Shape Information as well as Texture Information of the Objects Extracted with Dyadic Wavelet Transformation
ASV11-08-10
K. Arai, Y. Yamada

Data Hiding Method which Robust to Run-Length Data Compression Based on Lifting Dyadic Wavelet Transformation
ASV11-08-11
K. Arai, Y. Yamada

Multi-Dimensional Binning for Parallel Coordinates and Application to Large-Scale CFD Results
ASV11-08-12
T. Tanaka, N. Sakamoto, K. Koyamada

Displacement Acquisition of a Flattering Plate by using Image Processing
ASV11-08-13
M. Yamagishi, H. Morimura

Simulation and Visualization of Microstructure of Human Skin
ASV11-08-15
M. Kurokawa, T. Itoh, N. Toyoda

Fluctuation of Interface between Immiscible Fluids in the Rotating Cylinders
ASV11-08-19
Y. Toya, S. Hara, Y. Wada, T. Watanabe

Visualized Observation of Vortex Sheding form an In-Line Forced Oscillating Triangular Cylinder
ASV11-08-20
Y. Yokoi, T. Kumamoto, H. Yoshidome, K. Hatayama

Variation of Time Constant between the Super-Critical and Sub-Critical Taylor-Couette Flow
ASV11-08-21
T. Watanabe

Room B

OS99 General Topics of Visualization
13:00pm-14:30pm
Chairperson: T. Hatakeyama, Toyama Prefectural University
Co-Chairperson: Y. Koito, Kumamoto University

Application of Matched Refractive-Index PIV Method to Single-Phase and Two-Phase Flows with Complex Geometry
ASV11-99-16
K. Yuki, H. Hashizume, K. Suzuki

Observation of Bubbles on Wetting Surface in Subcooled Pool Boiling
ASV11-99-21
K. Suzuki, K. Yuki

Bridging Model of Electrocatalysis and Transport-Reaction Phenomena for Visualizing PEFC Operation
ASV11-99-28
S. Hasmady, K. Fushinobu, K. Okazaki

Fundamental Study on Laser Pointer PIV System
ASV11-99-35
S. Nakagawa, M. Hirose, K. Yamauchi, T. Hatakeyama, M. Ishizuka

OS8 Visual Information and Analysis
16:30pm-17:45pm
Chairperson: K. Koyamada, Kyoto University
Co-Chairperson: M. Yamagishi, Nagaoka National College of Technology

Fast Detection and Visualization of Protein Surface Pockets for Drug Design
ASV11-08-16
Y. Nakamura, T. Itoh

Fluid Flow Characteristics Analysis of the Channel Geometry in X-Shaped Micro-Channels
ASV11-08-18
S.M. Tu, S. Torii, Y.C. Shih
Flow and Heat Transfer around Finned-Heat Sink in Electronic Enclosure with Axial Cooling Fan
ASV11-99-40
T. Fukue, T. Hatakeyama, M. Ishizuka, S. Nakagawa, K. Koizumi, Y. Funawatashi

Fundamental Study of a Liquid Flow Control by Pressure in a Rectangular Micro Channel for Electronics Cooling
ASV11-99-43
T. Hatakeyama, M. Ishizuka, S. Nakagawa, S. Haruwaka, N. Horikawa

Flow Visualization in Human Nasal Cavity
ASV11-09-09
A. Asato, S. Hanida, M. Watanabe, F. Mori, K. Kumahata, S. Ishikawa, T. Matsuzawa

Simultaneous Measurement of Tank-Treading Motion of Red Blood Cell and Surrounding Flow Using Target-Tracking Confocal Micro-PIV
ASV11-09-10
M. Oishi, K. Utsubo, H. Kinoshita, T. Fujii, M. Oshima

Experimental Insight into Spatial and Temporal Dynamics of Wall Shear Rate using Elastic Replicas of Human Cerebral Aneurysms with Fluorescent Stereo PIV
ASV11-09-11
T. Yagi, M. Shinke, S. Takahashi, Y. Tobe, M. Umezu, H. Takao, Y. Murayama

Flow Visualization for a Rotary Blood Pump, EVAHEART TM
ASV11-09-12
T. Yamane, M. Nishida, D. Sugiyama, H. Kawamura, T. Miyakoshi, K. Yamazaki

Room C

Design and Fabrication of Miniature Supersonic Nozzle
ASV11-15-02
Sandhya T, S. Ahmed, A. Ahmed R
A Study on Flow Field with Shock Wave Discharged from a Pipe
ASV11-15-03
E. Tamura, S. Kitajima, J. Iwamoto

Visualization of Ablation and Spallation of Icy Object in Hypersonic Flow at Mach Number 7
ASV11-15-05
K. Suzuki, O. Imamura, T. Okunuki

Observations of SiC Ablations in Air Plasma Freejets
ASV11-15-06
M. Funatsu, R. Shibata, M. Ozawa, R. Onozawa, H. Shirai, F. Takakusagi

Visualization of Granular Flow around Obstacle
ASV11-15-07
R. Yano, K. Suzuki

Visualization of Supersonic Mixing Enhanced by Cavity-Induced Flow Oscillation
ASV11-15-09
T. Handa, T. Yamauchi, J. Fujita, A. Nakano

Visualization of Shock Wave induced by Direct Current Plasma Discharge in Hypersonic Flow over Flat Plate
ASV11-15-13
Y. Watanabe, K. Suzuki

Numerical Study of Shock-Induced Entrainment of a Rectangular Solid Body
ASV11-15-14
Y. Sakamura, S. Uesugi, K. Nakayama

Thermographic visualization of the spatial distribution of the plasma flow
ASV11-15-04
Y.A. Kovalenko, T.V. Chernishov, D.N. Novichkov, I.V. Ovcharov, A.N. Yermilov

OS15 Shock Wave and Plasma
14:50pm-16:05pm

Chairperson: K. Suzuki, University of Tokyo
Co-Chairperson: T. Handa, Kyushu University

Studies on Fluid-Plasma Interaction Associated with Gas Blast Characteristics Based on a High-Order LES Turbulence Model
ASV11-15-10

Technique of Focusing Schlieren Applied to Measure the Flow Density in Shock Tunnel
ASV11-15-12
Ai-min Xie, Jie Huang, Xu Xiang, Lü Zhi-guo, Song Qiang, Zheng Lei, Liu Sen

Visualization of Results in Higher-Order Finite Elements
ASV11-99-08
G. Nikishkov
Visualization of Three-Dimensional Structure of Mixed Convection in a Rectangular Channel with a Cavity
ASV11-99-50
Y. Funawatashi, H. Watanabe, T. Mizukami

Room D
OS4 Heat Transfer and Turbulent Flow
13:00pm-14:30pm
Chairperson: C.T. Hsu, The Hong Kong University of Science and Technology
Co-Chairperson: M. Muto, Central Research Institute of Electric Power Industry

Thermal Fluid Flow Transport Characteristics in Confined Channels with Two-Dimensional Dual Jet Impingement
ASV11-04-01
C. Senkal, S. Torii,

Stereo-PIV Measurement of Turbulent Shear Stress in a Flow Mixer
ASV11-04-02
C. Shekhar, K.Y. Park, K. Nishino, Y. Yamane, J. Huang

The Flow Visualization and Detail of Heat Transfer on Surface with a Transverse Perforated Rib
ASV11-04-03
C. Nuntadusit, P. Panich, M. Wae-Hayee

Quantitative Visualization of High-Schmidt-Number Scalar Mixing in Grid Turbulence
ASV11-04-05
H. Suzuki, K. Nagata, Y. Sakai

Russian Thermal Vision is more than 50 years old
ASV11-04-07
I.V. Ovcharov

Effects of the Swirl-Type Mixed Convection and Heat Transfer in Horizontal Rectangular Duct with Heated and Cooled Side Walls
ASV11-04-09
K. Toriyama, T. Yamauchi,

OS4 Heat Transfer and Turbulent Flow
14:50pm-16:35pm
Chairperson: M. Tsubokura, Hokkaido University
Co-Chairperson: Igor V. Ovcharov, Russian Electrotechnical Institute

Three-Dimensional Flow Visualization of Boundary Layer of a Rotating Sphere at around Critical Reynolds Number
ASV11-04-10
M. Muto, M. Tsubokura, N. Oshima

A Study on Heat Transfer Characteristics from a Non-Symmetric Impinging Jet in Crossflow
ASV11-04-11
M. Wae-Hayee, C. Nuntadusit, P. Tekasakul

Statistical Scale of Hairpin Vortex Packets in the Later Stage of Bypass Transition Induced by Cylinder Wake
ASV11-04-12
Z.Q. Tang, N. Jiang

Visualization on Self-ignition and Flame Propagation of Pressurized Hydrogen by Sudden Release through a Tube
ASV11-04-16
H.J. Lee, S.H. Kim, Y.R. Kim, I.S. Jeung

Numerical Simulation on Forced Convection in Fin-Tube Heat Exchangers using Dynamic LBM
ASV11-04-19
S.W. Chiang, K.F. Sin, C.T. Hsu

PIV Measurement of Thermal Convective Flow above a Cooking Oven (Insight into Turbulence Structure Near a Heat Source)
ASV11-04-20
Y. Hattori, H. Suto

Coherent Structures Manipulation by Blowing and Suction from Streamwise Slits
ASV11-04-21
Z.Y. Xia, N. Jiang, Y. Tian
Investigation of Attachment Saddle Point Structure of 3-D Separation in Laminar Juncture Flow using PIV
ASV11-99-11
H. Zhang, B. Hu, H. Wang, Y. Muhammad, Z.O. Zaw

Using Visualization Technique in Determining Characteristics of Water Flows Over a Multistepped Rise Part I : Upstream Geometry
ASV11-99-14
D. Dimitriou, J. Demetriou

Using Visualization Technique in Determining Characteristics of Water Flows Over a Multistepped Rise Part II : Downstream Geometry
ASV11-99-15
D. Dimitriou, J. Demetriou

Visualization of Leaking and Accumulating Hydrogen under a Sensing-Based Ventilation Control in a Partially Open Space
ASV11-99-17
K. Matsuura, M. Nakano, J. Ishimoto
<table>
<thead>
<tr>
<th>Room A</th>
<th>Room A</th>
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<tbody>
<tr>
<td><strong>Keynote Lecture</strong></td>
<td><strong>OS2 Optical Measurement</strong></td>
</tr>
<tr>
<td>9:00am-10:00am</td>
<td>10:20am-12:05pm</td>
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<tr>
<td><strong>Quantitative Investigations of Instantaneous Flow Behaviors</strong></td>
<td><strong>Experimental and Numerical Study on Exchange Flow in near Field of Buoyant Jet</strong></td>
</tr>
<tr>
<td>ASV11-ke-04</td>
<td>ASV11-02-01</td>
</tr>
<tr>
<td><strong>Quantitative Visualization of Various Biofluid Flow Phenomena Using X-Ray Micro-imaging Technique</strong></td>
<td><strong>Performance of a New Hybrid PTV</strong></td>
</tr>
<tr>
<td>ASV11-ke-03</td>
<td>ASV11-02-02</td>
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<table>
<thead>
<tr>
<th>Room B</th>
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<tbody>
<tr>
<td><strong>Keynote Lecture</strong></td>
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<tr>
<td>9:00am-10:00am</td>
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<tr>
<td>Chairperson: T.H. Chang, <em>Korea Institute of Science and Technology Information</em></td>
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<tr>
<td><strong>Laser Based Quantitative Imaging for Micro/Nano-Scale Transport Phenomena</strong></td>
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<tr>
<td>ASV11-ke-02</td>
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<tr>
<td>K. Hishida</td>
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<tr>
<td><strong>Soot Formation Characteristics of Diffusion Flames Using Laser-Based Measurements</strong></td>
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<tr>
<td>ASV11-ke-01</td>
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<tr>
<td>S.H. Chung</td>
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<tr>
<td><strong>Visualization of Boundary Layer Transition by Viscous Oil</strong></td>
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<tr>
<td>ASV11-02-05</td>
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<tr>
<td>V. Mosharov, V. Radchenko,</td>
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<tr>
<td><strong>Investigation of Polymer Properties for the Enhancement of TSP Sensitivity</strong></td>
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<tr>
<td>ASV11-02-06</td>
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<tr>
<td>Y. Egami, Y. Matsuda, H. Yamaguchi, T. Niimi</td>
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<tr>
<td><strong>Calibration Flow for Three-Dimensional Velocity Field</strong></td>
</tr>
<tr>
<td>ASV11-02-07</td>
</tr>
<tr>
<td>Y. Tanaka, Y. Hirano, S. Murata</td>
</tr>
</tbody>
</table>
Measurement of Three-Dimensional Velocity Field of Buoyant Jet at Low Froude Number Using Time-Resolved Scanning Stereo PIV
ASV11-02-08
T. Gohno, T. Syutoh, T. Yamagata, N. Fujisawa

OS14 Turbomachinery
15:20pm-16:35pm
Chairperson: K. Tanaka, Kyushu Institute of Technology
Co-Chairperson: T. Yamaguchi, Aisin AW Co., Ltd.

Application of a High Order LES Model to Predict Transitional Heat Transfer Characteristics over Turbine Vane Surface
ASV11-14-01
D. Biswas, T. Jimbo

PIV Investigation of Reynolds Stress-Relaxation-Strain Eddy Viscosity Model for Low-Speed Axial Fan
ASV11-14-03
Y.X. Jia, N. Jiang

Secondary Flow Structures in a Centrifugal Pump
ASV11-14-04
K.W. Cheah, T.S. Lee, S.H. Winoto

A Study on Suction Performance and Cavitating Behaviour of Helical Inducer with Inlet Asymmetrical Obstacle Plate
ASV11-14-06
T. Igoshi, Y. Uchinono, K. Ishizaka, S. Watanabe, A. Furukawa, E. Koroitamana

On the Aspect-Ratio Effect of a Cross-Flow Fan
ASV11-14-07
S. Nagasaka, Y. Onishi, J. Funaki, K. Hirata

Study on Flow Field inside Jet Fan using Large Eddy Simulation
ASV11-14-08
S. Tomimatsu, Y. Yamade, Y. Hirokawa, N. Nishikawa

Field Analysis around a Lockup Clutch inside a Torque Converter
ASV11-14-10
T. Yamaguchi, S. Yamakawa, S. Ikeda, K. Tanaka

Three-Dimensional Flow Structure around a Finite Disk Rotating in a Cylindrical Casing
ASV11-14-12
T. Watanabe, S. Fujisawa

Numerical Visualization of Cavitating Flows in a Double-Suction Volute Pump
ASV11-14-13

Multifrequency Electrical Impedance Analysis of the Solid-Liquid Two Phase Flow (An Application in Blood Flow Monitoring)
ASV11-03-01
A. Sapkota, M. Takei, O. Maruyama, R. Kosaka, T. Yamane
Simultaneous Simulation and Visualization of Multiphase Flow on GPU  
ASV11-03-02  
H. Ando, T. Shibuya, K. Toriyama

Flow Visualization around a Hydrofoil Close to a Free Surface  
ASV11-03-04  
I. Kumagai, T. Kushida, K. Oyabu, Y. Tasaka, Y. Murai

Visualization of Extinguishing Gas Flow Released from Bursting Soap Bubble  
ASV11-03-07  
T. Murashita, H. Torikai, A. Ito

Droplets Analysis of Cooling Tower Spray Nozzle by Photography  
ASV11-03-09  
P. Panware, W. Asvapoositkul

Ultrasound Doppler Visualization of Moving Interfaces in Gas-Liquid Two-Phase System  
ASV11-03-10  
Y. Murai, Y. Tasaka, Y. Takeda

Experimental and Numerical Visualization of Water/Air Two-Phase Flow in an Eductor  
ASV11-03-11  

Flow Visualization of a Valveless Micropump with High Performance  
ASV11-10-02  
A.B. Wang, M.C. Hsieh

Study of Local Microstreaming and Droplet Breakup in Flow-focusing Devices with μPIV  
ASV11-10-04  
Y.N. Cheung, H.H. Qiu

Quantitative Visualization of Dissolved Oxygen Concentration Field in a Microchannel Using PtOEP/PS film  
ASV11-10-05  
K.C. Kim, D.H. Song, H.D. Kim

Development and Applications of a LED Micro-PIV System  
ASV11-10-06  
S.Y. Jaw, J.J. Sheen, T.H. Huang, J.H. Chen

Viscoelastic Flow in Asymmetric Planner Contraction Geometry -Effect of Contraction Width-  
ASV11-10-07  
T. Yamagata, N. Fujisawa, T. Yajima

Microscale Visualization of Ionic Liquid in Open Channel by Scanning Electron Microscope  
ASV11-10-08  
T. Kawaguchi, M. Kondo, I. Satoh, T. Saito

Experimental Study on Micro Droplet Collider  
ASV11-10-09  
Y. Sugii, K. Takahashi, T. Kitamori
Observation of Vorticity Generation in Micro/Nano–Channel Flows Subject to an Electric Field
ASV11-10-10
Zhanhua Silver-Li, Gaopan Kong, Qun Yu, Trevor H. Moulden

Effect of oil Concentration on Condensing Heat Transfer Coefficient of R-134A
ASV11-99-29
Eed A. Abdel-Hadi, Sherif H. Taher, Abdel Hamid M. Torki, Samar S. A. Hamad

A Study on the Flow Analysis for Straight Blade Vertical Axis Wind Turbine by Computational Fluid Dynamics
ASV11-99-18
K. Horiuchi, I. Ushiyama, K. Seki

Study of Regenerative Braking of Electrical Vehicles
ASV11-99-30
S. Ghania

Study on Liquid Crystalline Flow Induced by Direct Current Electric Field
ASV11-99-19
K. Kodama, T. Tsukiji, S. Nishimura

Bipolar and Multi-Terminal HVDC Systems under Different Conditions
ASV11-99-31
Abdelsalam. H. Hamza, Samy. M. Ghania, Tamer Elyan

Space Humanities – Application of the ALOS Satellite Data to Archaeological and Anthropological Investigation with 3D Grand Views
ASV11-99-20
F. Nakano, K. Sakata

Control of Stepper Motor Using Microcontroller for Computer Numerical Control (CNC) Drilling Machines
ASV11-99-32
Samy. M. Ghania, A. Saber, Raed Obaid

Oil and Smoke Flow Visualization Past Two-Dimensional Airfoils for an Unmanned Aerial Vehicle
ASV11-99-23
L. Velazquez-Araque, J. Nožicka

Static Visualization of Dynamical Plasma Collision
ASV11-99-33
N. Kawamoto, Y. Hatanaka, K. Hasegawa, S. Nakata, S. Tanaka, N. Sakamoto, K. Koyamada, M. Osada, K.A. Tanaka

Pressure Drop of Pipe Flow in a Manifold Block
ASV11-99-27
O. Abe, T. Tsukiji, T. Hara, K. Yasunaga

Flight Attitude of a Small Flapping Robot and Its Flight Performance
ASV11-99-39
T. Imura, M. Fuchiwaki, K. Tanaka
OS99 General Topics of Visualization  
16:45pm-17:45pm  
Chairperson: S. Tanaka, Ritsumeikan University  
Co-Chairperson: 

Comparative Evaluation and Performance Prediction of Cooling Tower Drift Eliminator  
ASV11-99-44  
C. Kerdsongsaeng, W. Asvapoositkul

Visualization of Dynamic Slope Failure Line in the Model embankment by High-speed Digital Camera  
ASV11-99-47  
Y. Nabeshima, K. Nakata

Visualization of Snowdrift around Cube by Experiments and Numerical-simulations  
ASV11-99-48  

Visualization of Rotating Vortex in a Centrifugal Blower Impeller  
ASV11-99-52  
S. Noguchi, D. Tsugita, C.K.P. Kowshik, Y. Ohta

OS16 Fluid Control and Measurement  
10:20am-12:05pm  
Chairperson: V.V. Kozlov, Institute of Theoretical and Applied Mechanics  
Co-Chairperson: S. Umeda, Fukuyama University

Flow Characteristics of One-Third Sub-Harmonic Lock-on behind a Rotary Oscillating Cylinder at Re 600  
ASV11-16-01  
C.T. Chai, W.T. Lu, F.L. Song, C.H. Kuo

Near-Wake Flow Characteristics of Modified Cylinder with Slit  
ASV11-16-02  
F. Bao, J.J. Miau, Z.R. Liu, Z.S. Liang, Q. Yang, Y. Liu

Three-Dimensional Visualization of Pulsed Rectangular Jet Captured by Scanning-LIF Method  
ASV11-16-04  
K. Sugibuchi, S. Iio, Y. Hanedai, T. Ikeda

Visualization Analysis of Flow in the Dispersion Section of a Headbox in Papermaking Machines  
ASV11-16-05  
M. Sumida, S. Suzuki

Flow Visualization in a Cylindrical Water Supply Tank  
ASV11-16-06  
M. Saitou, T. Kiwata, J. Suginuma, S. Kimura, N. Komatsu, K. Nomura

Computations on High Efficiency Airfoil at Low Reynolds Numbers  
ASV11-16-07  
R. Nozawa, Y. Kida, J. Funaki, K. Hirata

Experimental Study on Displacement Efficiency of Water in a Cylindrical Water Supply Tank  
ASV11-16-08  
M. Shimada, M. Honda, T. Akaike, A. Rynearson, R. Sato

Room D  

OS16 Fluid Control and Measurement  
15:20pm-16:50pm  
Chairperson: S. Iio, Shinshu University  
Co-Chairperson: 

Visualization of Flip-Flop Flows from Diamond-Shaped Cylinder Bundles with Wall Concavity by Means of PIV  
ASV11-16-09  
S. Umeda
Visualization of Acoustic Excited Atmospheric Plasma Jet
ASV11-16-10
C. Uchiyama, K. Yanagisawa, S. Iio, N. Ezumi, T. Ikeda

Experimental Study of Localized Boundary Layer Disturbances at High Free Stream Turbulence Level (Review)
ASV11-16-11
V.V. Kozlov, M.M. Katasonov, D.S. Sboev

Analysis on Vortex-Type Air Bearing
ASV11-16-12
X. Li, K. Minato, Y. Nakamura, S. Iio, K. Kawashima, T. Kagawa

Grid Dependency of the MI Simulation for an Orifice Flow in a Circular Pipe
ASV11-16-13
M. Nakao, K. Kawashima, T. Kagawa

Spatial and Temporal Variation of Turbulence during Oscillatory Flow in Realistic Model Human Airways
ASV11-po-06
G. Tanaka, A. Hatori, R. Takano

PIV Measurements of Airflow in the Human Nasal Cavities
ASV11-po-07
T. Nishizawa, R. Takano, Y. Watanabe, G. Tanaka

Characteristics of Thermal Flow in Macro Channel Using Venturi Effect
ASV11-po-08
G. Nakamuta, S. Torii

Visualization of Mixing of Microalgae and Its Labelling Reagents inside Microdroplets for Oil Content Detection
ASV11-po-09
Z.M. Chen, C.Y. Huang, H.Y. Wang

Visualization of Flow in a T- Branch Rectangular Pipe
ASV11-po-11
K. Mizuta, S. Takahashi, N. Arai

Dew and Frost Point Measurements of Residual Water in High Pressure Hydrogen Utilizing Visualization and Image Analysis
ASV11-po-12
K. Ishida, M. Kosaka, M. Monde

Visualization of Internal Defects in Concrete Structures Using Active Infrared Thermographic Inspection Technique
ASV11-po-13
K. Kurita, M. Oyado

Visualization of Electric Potential of Human Body Caused by Walking Motion under Non-Contact Conditions
ASV11-po-14
K. Kurita
Brownian Dynamics Simulation on Aggregation of Submicron Particles
ASV11-po-15
M. Nakamura, D. Tanaka

Flow Visualization of a Droplet Impact on a Thin Fluid Layer
ASV11-po-16
K. Iwamoto, N. Ninomiya

Visualization of Vortices Pattern in the Interval Space between Two Separately Crossed Circular Cylinders
ASV11-po-18
H. Yamada, R. Mizobe, E. Hayashi, M. Iwamoto

Visualization of Nano-Scale Transverse Wave in Liquids Studied by Molecular-Dynamics Simulations
ASV11-po-20
S. Munejiri, F. Shimojo, K. Hoshino

Flow Visualization of Acoustic Disturbance ahead of Hemisphere Model in Supersonic Flow
ASV11-po-21
T. Kawamura, T. Mizukaki

Measurement of Flood in Inaccessible Mountainous River by Imaging Techniques Using River Monitoring Cameras
ASV11-po-22
T. Deguchi, K. Yamashita, I. Fujita, M. Honda

Development of a System for Visualizing Indented Characters
ASV11-po-23
T. Kamitani, M. Ueda, S. Tanaka, A. Ida, M. Sakakibara

An Experimental Study of the Shapes of Rotor for Horizontal-axis Small Wind Turbines with and without Winglet
ASV11-po-26
Y. Nishizawa, M. Suzuki, H. Taniguchi, I. Ushiyama

Visualization of Laminar Necklace Vortices Produced by a Protuberance of Square Plate
ASV11-po-27
H. Yamada, Y. Nishi, M. Iwamoto

Numerical Simulation and Visualization of Acoustic Wave Propagation using the CIP Method on GPU
ASV11-po-28
Y. Suzuki, H. Ando, T. Toriyama

Experimental Estimation in Characteristics of Swirling Flow Appearing in a Three-Dimensionally connected Dual Elbow Layout by Means of Matched Refractive-Index PIV Measurement
ASV11-po-30
T. Kubo, H. Yanai, S. Ebara, H. Hashizume

Visualization of Rotating Stall in Vaneless Diffuser of a Centrifugal Compressor
ASV11-po-31
S. Ohuchida, M. Unno, T. Kawakubo, H. Tamaki

Numerical Visualization of Radiative Heat Flux of Dispersed Particles Irradiated by Solar Light
ASV11-po-33
S. Sakuma, A. Sakurai, K. Matsubara, N. Gokon, T. Kodama
### June 8

#### Room A

**Keynote Lecture**

9:00am-10:00am

Chairperson: C.T. Hsu, *The Hong Kong University of Science and Technology*

**Interaction of Pulse Filamentary Discharge with Heterogeneous Media**

ASV11-ke-08


**Visualization Studies on the Boundary Layer Bypass Transition and Control**

ASV11-ke-07

C. Pan, J.J. Wang

#### Room B

**Keynote Lecture**

9:00am-10:00am

Chairperson: S.H. Winoto, *National University of Singapore*

**An Innovative Tab for High-Speed Jet Control**

ASV11-ke-06

E. Rathakrishnan

**The Spirit of Jomon People Visualized Vortex before BC2500**

ASV11-ke-05

Y. Nakayama, M. Oki, K. Aoki, S. Ito, Y. Yamagishi

#### Room A

**OS11 Aeronautics and High Speed Flow**

10:20am-12:05pm

Chairperson: A. Xie, *China Aerodynamics R&D center*

Co-Chairperson: In-Seuck Jeung, *Seoul National University*

**Three-Dimensional Flow Visualization of Transverse Injection behind a Backward-Facing Step in Supersonic Flow**

ASV11-11-05

C.H. Kim, I.S. Jeung, B. Choi, T. Kouchi, G. Masuya

**Aerodynamic Performance of a Boundary-Layer Diverter for Supersonic Propulsion System**

ASV11-11-06

H. Miki, Y. Watanabe, M. Kameda

**Time-Resolved PIV Applied to NACA0012 Airfoil in Low-Speed Wind Tunnel**

ASV11-11-07

H. Kato, S. Koike, K. Nakakita, A. Iwasaki

**Experimental and Numerical Studies of Effect of Nozzle Geometry on Supersonic Free Jets**

ASV11-11-09

K. Hatanaka, T. Saito, M. Hirota, Y. Nakamura, Y. Suzuki, T. Koyaguchi

**PSP Measurement of Pressure Distributions on a Cambered Airfoil for Mars Exploration Airplane**

ASV11-11-10


**Three Dimensional Flow Visualization Studies on a Typical Sounding Rocket Model in Supersonic Flow**

ASV11-11-11

G. Kumaravel, R.C. Mehta, E. Rathakrishnan
Corrugation Geometry Effectiveness for Jet Mixing  
ASV11-11-13  
M. Kaushik, E. Rathakrishnan

Vortex Manipulation for Free Jet Control  
ASV11-11-03  
Arun Kumar P, Amit Gautam, Rathakrishnan E

OS11 Aeronautics and High Speed Flow  
13:25pm-14:55pm  
Chairperson: T. Mizukaki, Tokai University  
Co-Chairperson: H. Kato, JAXA

Numerical Simulation of Single and Twin Jet Impingement on a Typical Jet Deflector  
ASV11-11-16  
Navin Kumar Kessop, Dipankar Das, K. J. Devasia, P. Jeyajothisraj

Numerical Flow Visualization in Overexpanded Axisymmetric Nozzle  
ASV11-11-18  
G Natarajan, R.C. Mehta, N. Bose

Evaluation of Temperature-Sensitive Paint using Thermographic Phosphor by Hypersonic Aerodynamic Heating  
ASV11-11-19  
R. Sawamura, K. Nishigata, H. Nagai, K. Asai

Visualization Study of Vortical Flow over a Typical Wing-Body Model Featuring Double-delta Wing  
ASV11-11-20  
B. Sampath Rao, Rajan Kurade, Ritukanchan Dubey, A.E. Sivaramakrishnan, V.R. Ganesan

Reconstruction for 3D Laser Interferometric CT (LICT) Measurement of High-Speed Unsteady Flow Fields around a Long Cylindrical Rod  
ASV11-11-22  
T. Sato, T. Inage, S. Tsuchikura, T. Kimata, M. Ota, K. Maeno

Visualization of Shock-Induced Vortex Breakdown on a Delta Wing in Transonic Flow Regime  
ASV11-11-23  
T. Makoshi, T. Kashida, S. Kimura, Y. Seya, M. Kameda

OS11 Aeronautics and High Speed Flow  
15:15pm-16:15pm  
Chairperson: K. Asai, Tohoku University  
Co-Chairperson:

Flow Visualization of Starting Process of a Two-Dimensional Truncated Plug Nozzle using Shock Tube  
ASV11-11-27  
T. Mizukaki, S. Watabe

PIV Measurements of Vortical Flowfield in Transonic Wind Tunnel  
ASV11-11-28  
W. Jiang, J. Xiong, S. Cheng

Eight Sequence Laser Shadowgraph for the Visualization of Hypervelocity Impact  
ASV11-11-29  
Huang Jie, Song Qiang, Xie Ai-min, Zheng Lei, Luo Jin-yang, Liu Sen

Application of Flow Visualization Techniques in Transonic Wind Tunnel  
ASV11-11-30  
Xiong Jian, Jiang Wei Min, Zhou Qian

OS13 Safety Management Technology  
16:25pm-17:25pm  
Chairperson: S. Hattori, University of Fukui  
Co-Chairperson: M. Kondo, Nagoya University

Evaluation of Mass Transfer Coefficient behind an Orifice in a Swirling Pipe Flow with Orifice Bias  
ASV11-13-01  
A. Ito, T. Yamagata, T. Takano, N. Fujisawa
Experiments on Liquid Droplet Impinging Erosion by High-Speed Spray
ASV11-13-02
D. Hama, A. Ikarashi, T. Yamagata, T. Takano, N. Fujisawa

On the Evaluation of Mass Transfer Coefficient behind the Orifice in Pipe Flow
ASV11-13-03
M. Kondo, Y. Kuroda, R. Kojyo, Y. Tsuji

Effect of Drop Size on Liquid Impingement Erosion for Safety Management
ASV11-13-05
S. Hattori, G. Lin

Acceleration of Dynamic Discrete Ordinate Method for Viscous Flow Simulation on GPU-Cluster
ASV11-99-57
K.F. Sin, S.W. Chiang, C.T. Hsu

At Atmospheric Conditions Related to Film Temperatures 300 K and 600 K the He+SF6 Mixture is unequivocally the Best Gas-Gas Mixture
ASV11-99-58
Mohammad Reza Mobinipouya

Visualization of Vortex Structures Induced by Lateral Jet Flow on a Revolution Body
ASV11-99-60
Z. Ni, Y. Liu, S. Li

The Visualization of Three-Dimension Shock Wave Structure in Hypersonic Flow Using Schlieren Photography and Laser Vapor Screen Techniques
ASV11-99-61
S. Li, K. Wang, Z. Ni, M. Tong

Room B

OS99 General Topics of Visualization
10:20am-12:05pm
Chairperson: T. Wang, China Academy of Aerospace Aerodynamics
Co-Chairperson:

Improvement of Quantitative Image Measurement of Natural Convection Using Color-Stripes Background Oriented Schlieren (CSBOS) Method
ASV11-99-53
M.F. Zeb, M. Ota, K. Maeno

The Study of Heated Diamond-shaped Column in 2-D Airflow
ASV11-99-55
S. Torii, Z. Lin

Supersonic Condensation of Ethanol Vapor on the Solid Wall behind Incident and Reflect Shock Wave
ASV11-99-56
H. Zhu, G. Ogata, H. Okuno, K. Maeno, M. Ota

OH-PLIF Measurement of Edge-Flame Established in Counterflow Field
ASV11-01-03
W. Nishiwaki, H. Mochizuki, T. Kouchi, K. Takita

Effect of Compression Ratio on In-cylinder Tumble Flows in an Unfired Internal Combustion
ASV11-01-04
Murali Krishna. B, J.M. Mallikarjuna
Comparison between Acoustically-Excited Diffusion Flames of Tube and Slit Burners
ASV11-01-05
M. Suzuki, S. Ikura, W. Masuda

Cellular Structure of Methane-Air Lean Premixed Flames Generated by Intrinsic Instability
ASV11-01-07
S. Kadowaki, Y. Kuniyoshi

Visualization of Spray Impingement and Measurement of Its Adhesion Thickness
ASV11-01-08
S. Okamoto, H. Kawashima, T. Ishima

Simultaneous Measurement of Temperature and Velocity Field in Flickering Flame Using Combined Flame Reaction and PIV
ASV11-01-09
T. Abe, M. Ohkubo, Y. Nakagawa, T. Yamagata, N. Fujisawa

Diagnostic Technique for Combustion Based on the Image of CH* and Near-IR Emission
ASV11-01-10
T. Hirasawa, K. Gotanda, Y. Kamata, Y. Nakamura

Acetone-OH Simultaneous PLIF: A New Strategy to Diagnose Ultra-Lean (φ < 0.6) Flames
ASV11-01-11
Y. Nakamura, Y. Yamada, M. Hirota, T. Saito

Spatial Evolution of Large Scale Structure in Supersonic Mixing Layer
ASV11-09-62
T. Wang, Z. Ni, Y. Sun, X. Zhu

Investigation of Novel Electrospray Techniques for Coating Ceramic Surfaces with Rubber Coagulants
ASV11-09-63
P. Kaewkamjun, Y. Laoonual, S. Songchon, D. Koolpiruck, P. Jornsanoh

Image Recording with High-Speed Object Tracking
ASV11-09-65
J. Sakakibara, J. Kita, N. Osato

Experimental Insight into Modeling of Cerebral Aneurysm Hemodynamics: Comparison between Stereo PIV and CFD
ASV11-09-66
S. Takahashi, T. Yagi, M. Shinke, Y. Tobe, M. Umezu, H. Takao, Y. Murayama
Control of Supersonic Flow Fields using Local Occurrence of Non-Equilibrium Condensation
ASV11-12-03

Control of an Asymmetric Flow in a Supersonic Nozzle
ASV11-12-05

Hysteretic Phenomena of Shock Waves with Asymmetric Characteristics in a Supersonic Nozzle
ASV11-12-06
S. Matsuo, T. Setoguchi, N. Shiomi, H.D. Kim

Evaluation of Transfer Function of Pressure-Sensitive Paint for Unsteady Flow Measurement
ASV11-12-07

Evaluation of Unsteady Pressure Field and Detection of Aerodynamic Noise Source from a Square Cylinder Based on PIV Measurement
ASV11-12-08
Y. Oguma, T. Yamagata, N. Fujisawa, T. Yoda, A. Nashimoto

Direct Numerical Simulation of Circular Jet Up To Re=3000
ASV11-07-06
K. Sato, K. Matsubara, A. Sakurai

Numerical Visualization of Reacting Turbulent Flow in a Sudden-Expansion Reactor
ASV11-07-10
O. Fukuda, T. Yamaguchi, K. Matsubara, A. Sakurai, Y. Aoki, M. Maki, F. Taguchi

Visualization of Near-Field Light Scattering by a Nano/Micro Particle Using Finite Difference Time Domain Method
ASV11-07-11
S. Hanashima, A. Sakurai, K. Matsubara

Flow Visualization of Turbulent Structure in a Channel with a Single Rib
ASV11-07-13
T. Miura, K. Matsubara, A. Sakurai

3-Dimensional Numerical Analysis of Instability of Taylor Flow and Wavy Taylor Flow
ASV11-07-16
Y. Toya, T. Kuwabara, H. Nakazawa, H. Kakeno, T. Watanabe

Turbulent Structures in a Buoyant Plume Past a Bluff Body
ASV11-07-01
H. Suto, Y. Hattori

Color Space Visualization of Impressionist Paintings
ASV11-07-04
K. Ohmi, P.Q. Huy, Y. Li
The Optimization of Style Points and Flight Distance in Ski Jumping Flight
ASV11-07-05
K. Seo, K. Shimoyama

Numerical Simulation of Snowfall around Driving Car
ASV11-07-07
T. Kusachi, M. Oki

About Color Vocabulary in Gingatetsudo no Yoru (Night of Galaxy Railway)
ASV11-07-08
M. Inami, Y. Saito, K. Horii

OS7 Scientific Art, Sports Science and Numerical Visualization
16:25pm-17:25pm
Chairperson: K. Seo, Yamagata University
Co-Chairperson:

Story Flow Visualization of English Literature and Its Movie Exhibition
ASV11-07-09
M. Yamada, Y. Murai, I. Kumagai

Flow Visualization around Knuckling Effect Soccer Ball
ASV11-07-12
S. Hong, C. Chung, T. Asai

Flow Visualization of Football Subject to Knuckling Effect
ASV11-07-14
T. Asai, S. Ito, K. Seo, T. Yamagata, T. Yamagata

Aerodynamic Force Evaluation of Non-Spinning Football by Stereo Image Analysis
ASV11-07-15
T. Nagasawa, T. Yamagata, N. Fujisawa, T. Asai

Room D

OS99 General Topics of Visualization
10:20am-12:05pm
Chairperson: T. Kiwata, Kanazawa University
Co-Chairperson: Y. Laoonual, King Mongkut's University of Technology Thonburi

Planar Laser Induced Exciplex Fluorescence Imaging for Fuel Liquid and Vapor measurement in Flash-Boiling Sprays
ASV11-99-67
Y. Zhang, G. Zhang, M. Xu

Unsteady Flows around a Circular Cylinder with Simultaneous Multipoint Measurements of Pressure
ASV11-99-68
Y. Takakura, S. Watanabe, M. Takagi

A Numerical Procedure has Successfully Predicted Accurate Values of Thermodynamic Properties in Seven Cubic Equations of State for New Refrigerants
ASV11-99-69
O. Mobinipouya

A Unique Way for Maximizing Free Convection for Use in the Buildings
ASV11-99-70
N. Mobinipouya

Flow Around a 2-D Bluff Body with Increasing Wind Velocity in Short Time Duration
ASV11-99-10
H. Shirato, O. Sasaki, K. Image

Real-Time Isosurface Rendering of Smooth Fields
ASV11-99-37
S. Nakata, S. Aoyama, R. Makino, K. Hasegawa, S. Tanaka
OS5 Civil and Coastal Engineering
13:25pm-14:55pm

Chairperson: J.J. Wang, *Beijing University of Aeronautics and Astronautics*
Co-Chairperson: K. Dan, *Akashi National College of Technology*

**Experimental Study on Flow Structures under a Partially Inundated Bridge Deck**
ASV11-05-01

**Three-Dimensional Study of the Effect of Aspect Ratio on Oblique Shedding behind a Circular Cylinder**
ASV11-05-02
D. Qin, S.W. Chiang, C.T. Hsu

**Accuracy of Non-Intrusive River Flow Measurement by using Space Time Image Velocimetry**
ASV11-05-05
H. Hara, I. Fujita, A Yorozuya

**Water-Surface Fluctuation and Its Convection Feature in Rough-Wall Open-Channel Flows**
ASV11-05-06
I. Fujita, Y. Furutani, T. Okanishi

OS5 Civil and Coastal Engineering
15:15pm-16:15pm

Chairperson: H.H. Hwung, *National Cheng Kung University*
Co-Chairperson: Y.C. Tai, *National Cheng-Kung University*

**Effects of Non-Uniform Cleanness of Water Screens on Pump Intake Flows**
ASV11-05-10
K.S. Hwang, Y.B. Li, H.H. Hwung

**Visualization of Tsunami Generated by Submarine Landslides Using a Trapezoidal Cross Section Model in an Open Channel**
ASV11-05-11
K. Dan, M. Hashimoto, S. Yamamoto

**Experimental and Theoretical Study on Flood Bore Propagation and Mushroom Jet Generation of Dam-Break Flow**
ASV11-05-12
H.H. Hwung, Y.C. Tai, R.Y. Yang, W.Y. Hsu, P.C. Kuo, I.V. Shugan

**Applicability of High-Speed Liner Computation for Added Mass and Flow Pattern**
ASV11-05-13
T. Tsuji, M. Yashima, H. Shimohara, K. Hirata

OS5 Civil and Coastal Engineering
16:25pm-17:25pm

Chairperson: C. Lin, *National Chung Hsing University*
Co-Chairperson: K.S. Hwang, *National Cheng-Kung University*

**Classifications for Vortex Motions Induced by Solitary Waves Propagating Over Different Submerged Structures**
ASV11-05-14
T.C. Ho, H.H. Hwung, C. Lin, K.S. Hwang

**Visualization of City Breathability Based on a CFD Technique: A Case Study for Urban Blocks in Niigata City**
ASV11-05-16
Y. Tominaga

**Interfacial Wave Motion Caused by Wave-Mud Interaction**
ASV11-05-15
W.Y. Hsu, H.H. Hwung, C.M. Liu, R.Y. Yang

**Observations of Wind Effect on Behavior of Roof Tiles by using High Speed Imaging**
ASV11-05-17
S. Okamoto